

31 MAR 2004

(12) INTERNATIONAL PUBLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
8 April 2004 (08.04.2004)

PCT

(10) International Publication Number
WO 2004/029622 A3

- (51) International Patent Classification⁷: G01N 33/50, C07K 16/18
- (74) Agents: KELLER, Günter et al.; LEDERER & KELLER, Prinzregentenstrasse 16, 80538 München (DE).
- (21) International Application Number: PCT/EP2003/010842
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (22) International Filing Date: 30 September 2003 (30.09.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 02021984.6 30 September 2002 (30.09.2002) EP
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- (71) Applicant (*for all designated States except US*): G2M CANCER DRUGS AG [DE/DE]; Paul-Ehrlich-Strasse 42-44, 60596 Frankfurt am Main (DE).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): PELICCI, Pier, Giuseppe [IT/IT]; Via Emilia 10, I-20090 Opera (Milan) (IT). MINUCCI, Saverio [IT/IT]; Via Don Minzoni 1, I-20090 Opera (Milan) (IT). PICCINI, Daniele [IT/IT]; Via Nenni 67, I-20085 Locate di Triulzi (Milan) (IT). MACCARANA, Marco [IT/IT]; Via Gran San Bernardo 32C, I-24068 Seriate (Bergamo) (IT). RONZONI, Simona [IT/IT]; Viale Lombardia, I-22066 Mariano Comense (COMO) (IT). ARECES, Lillana, Beatriz [IT/IT]; Via Carlo Goldoni 1, I-20129 Milan (IT). FARETTA, Marco [IT/IT]; Via Turati 49, I-20094 Corsico (Milan) (IT).
- Published:
- with international search report
 - before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- (88) Date of publication of the international search report: 5 August 2004
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: ANTIBODY TOOLS FOR THE DIAGNOSTIC USE IN THE MEDICAL THERAPY WITH INHIBITORS OF HISTONE DEACETYLASES

(57) Abstract: The invention relates to a method for determining whether a treatment of a disorder with an HDAC inhibitor is to be started/continued or not comprising determining the level of histone acetylation in the sample by use of an antibody capable of binding to acetylated histone, and classifying the disorder as to be treated with an HDAC inhibitor when the level of histone acetylation is significantly lower than that of a reference sample. The invention further relates to the diagnostic and prognostic use of specific antibodies and cell lines producing them.

WO 2004/029622 A3

BEST AVAILABLE COPY

INTERNATIONAL SEARCH REPORT

PC 7/2004/210

A. CLASSIFICATION OF THE SUBJECT MATTER
IPC 7 G01N33/50 C07K16/18

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

MEDLINE, BIOSIS, EPO-Internal, SEQUENCE SEARCH

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	BUTLER L M ET AL: "Inhibition of transformed cell growth and induction of cellular differentiation by pyroxamide, an inhibitor of histone deacetylase." CLINICAL CANCER RESEARCH: AN OFFICIAL JOURNAL OF THE AMERICAN ASSOCIATION FOR CANCER RESEARCH. UNITED STATES APR 2001, vol. 7, no. 4, April 2001 (2001-04), pages 962-970, XP002254427 ISSN: 1078-0432 page P964, left-hand column, paragraph 3 page 969, left-hand column, paragraph 1 page 966, right-hand column, paragraph 2 --- -/--	1-19

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- *Z* document member of the same patent family

Date of the actual completion of the international search

3 May 2004

Date of mailing of the international search report

03/06/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax (+31-70) 340-3016

Authorized officer

Cuendet, P

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/EP 03/10842

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	MARKS PAUL A ET AL: "Histone deacetylases and cancer: Causes and therapies." NATURE REVIEWS CANCER, vol. 1, no. 3, 20 December 2001 (2001-12-20), pages 194-202, XP009017156 ISSN: 1474-175X cited in the application page 1997, right-hand column, last paragraph page 200, left-hand column, last paragraph -right-hand column, paragraph 1 page 1999, right-hand column, paragraph 3 -----	1-11
X	WO 02/074962 A (JAPAN ENERGY CORP ;JAPAN SCIENCE & TECH CORP (JP); YOSHIDA MINORU) 26 September 2002 (2002-09-26) abstract; example 1 & DATABASE INTERNET 'Online! http://www4.ipdl.jpo.go.jp/cgi-bin/tran web cgi ejje; example 1 -----	12-17
X	EP 1 050 581 A (MEDICAL & BIOLOG LAB CO LTD) 8 November 2000 (2000-11-08) example 5 -----	12,13
X	WHITE D A ET AL: "PREPARATION OF SITE-SPECIFIC ANTIBODIES TO ACETYLATED HISTONES" METHODS: A COMPANION TO METHODS IN ENZYMOLGY, ACADEMIC PRESS INC., NEW YORK, NY, US, vol. 19, 1999, pages 417-424, XP002951560 ISSN: 1046-2023 page 422; tables 1,2 -----	12,13

BEST AVAILABLE COPY

INTERNATIONAL SEARCH REPORT

International Application No. PCT/IB98/04741

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 20-23
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by therapy
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No.

2003/10842

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
WO 02074962	A	26-09-2002	JP	2002272457 A	24-09-2002
			CA	2441187 A1	26-09-2002
			EP	1380646 A1	14-01-2004
			WO	02074962 A1	26-09-2002
EP 1050581	A	08-11-2000	EP	1050581 A1	08-11-2000
			WO	9936532 A1	22-07-1999

NOT AVAILABLE COPY